On an inner side of the annular member 11, a flange 14 is formed, whose inner side is aligned with an inner side of the annular member 11. The flange 14 projects upwardly from the annular member 11. An outer transition of the annular member 11 to the flange is round, and the outer side of the flange 14 forms an inwardly directed projection 15 in an upper area. The round transition and the projection 15 form, together with the upper portion 6 of the substrate carrier 3, a substantially uniform flow channel, when the substrate carrier 3 is in the position shown in Fig. 2.

At the upper end of the flange 14, the base 10 has an inwardly projecting nozzle plate 17 disposed substantially perpendicular to the flange 14, in which a plurality of nozzles 18 are formed, as will be described below in greater detail. The nozzle plate 17 has a central opening. In the area of the central opening, a flange 20 is provided which projects perpendicular to and beneath the nozzle plate 17. The flange 20 defines a central opening of the entire base 10.

Between the flange 20, the nozzle plate 17, and an inner side of the flange 14, or the annular member 11, a downwardly opening annular chamber 22 is formed.

A ring-shaped connection plate 25 with openings 26 closes off the lower side of the annular chamber 22. As shown in Fig. 2, the annular member 11 and the flange 20 have recesses facing the annular chamber, which respectively form a shoulder for supporting the

connection plate 25. The connection plate 25 is retained on the annular member 12 and the flange 20 by means of welding seams 27 or 28.

In the area of the openings 26 of the connection plate 25, connecting adaptors 30 are welded on, which are connected to the lines (not specifically shown) in order to supply a fluid to the processing chamber 22.

An insert 35 with a connecting adaptor 36 is arranged in the central opening formed by the flange 20. The insert 35 can be secured with a welding seam, a screw connection, or other suitable connecting means. An end face 37 of the insert 35 is aligned with an upper side of the nozzle plate 17. In the middle of this end face 37 of the insert 35, a nozzle 38 is provided, which, while not represented in the figures, is connected with the connecting adaptor 36. The connecting adaptor 36 is connected with a line (not illustrated), in order to lead a rinsing fluid through the nozzle 38 and apply a vacuum to the nozzle 38, as will be described below.

As best shown in Fig. 1, the nozzles 18 in the nozzle plate 17 are constructed respectively along a straight line, which runs tangential to the center nozzle 38 of the insert 35. Overall, six nozzle groups are provided, which extend along respective straight lines. Each nozzle group has six nozzles. The arrangement and number of the nozzle groups, as well as the nozzles 18 per group, however, can be varied

from the represented number shown. For example, the nozzles could be arranged along a bent or other shaped contour.

Also, the spacing of the nozzles shown in Figures 1 and 2, in particular, the central nozzle 38 of the insert 35, can be varied. The most radially inner-lying nozzles 18 of the nozzle groups are arranged as close as possible to the central nozzle 38 of the insert 35, although the space in Fig. 1 appears relatively large.

In Fig. 3, a schematic plan view of the rinsing and drying device 1 of the present invention is represented. In Fig. 3, the flow relationship of the flow through the central nozzle 38 relative to the flow through the nozzles 18 is represented. A uniform, radial, outwardly directed flow comes from the nozzle 38, as represented in Fig. 3 with the arrow 40. A flow directed transverse to the described radial flow comes from the nozzles 18, which is represented by the arrows 42. Through the cooperation of the radial flow 40 with the flow 42 running transversely to the flow 40, a spiral shaped, outwardly running flow is provided, as represented by the arrows 44 in Fig. 3.

In order to produce the flow running transversely to the radial flow, the nozzles 18 are respectively directed at an angle of 90° relative to the straight line along which they are disposed. In addition, the nozzles 18 form an angle of less than 90° relative to an upper surface 48 of the nozzle plate 17, that is, the nozzles 18 lead a fluid flow onto the wafers disposed above at an angle of less than 90°. In the